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Studies in Sisyrinchium—V: Two new eastern Species

By Eugene P. Bicknell

Up to the present time four species of *Sisyrinchium* have been recognized in the flora of the eastern coastwise states from New Jersey northward. These are *S. angustifolium* Miller, the commonest species of New York and New England and the only one ranging far northward and eastward through Maine to the provinces; *S. graminoides*, extending from east Massachusetts far southward and westward; *S. Atlanticum*, abundant along the coast from Massachusetts southward and occasionally found inland, as at Stratton, Vermont (A. J. Grout) and Concord, New Hampshire (W. W. Eggleston), and *S. mucronatum* Michx., common in the Alleghany region of east Pennsylvania and extending to central New York but as yet not reported east of the Delaware River.

To these four species two others must now be added, one a coastwise plant of New York and New Jersey, the other occuring from southern New Jersey southward. These new species are here described.

Sisyrinchium arenicola

Closely caespitose in stiff erect tufts 20–40 cm. tall from short woody rootstocks, the tufts coarsely brown-fibrous at base, the fibrous roots numerous, long and slender, becoming nearly black: stems and leaves rather bright green, sometimes glaucescent, readily discoloring to brown or black in drying, the spathes and often the stems and leaves purplish-tinged: leaves usually over half the height of the stem, stiff and erect, often slightly curved, .5–3 mm. wide, cuspidate-attenuate, strongly close-striate, minutely cellular-puncticulate between the nerves, the edges denticulate-serrulate to smooth: stem erect but often forming a shallow double curve, sometimes spirally twisted, 1–3 mm. wide, the distinct wings firm, striate, denticulate-serrulate or smooth; bracteal leaf conspicuous, erect, continuing the line of the stem, often slightly incurved, attenuate-acute, usually subequal with the peduncles, the rather broad compressed base strongly striate and oppositely bicarinate; peduncles 2–4, suberect or somewhat outcurved, in their early development appearing lateral from the stem, approximate or, when only two, the outer one often divergent, somewhat unequal, very short or elongated, 3–12 cm. long, stiff, wing-margined and serrulate, mostly 1 mm. or more wide (.5–2 mm.): spathes erect, the mostly cuspidate-acuminate bracts striate with delicate raised nerves, slightly unequal or the outer one slenderly prolonged for as much as 2 cm. when, as not infrequently occurs, the stem is simple; interior scales brownish-tinged, becoming over ¾ the length of the inner bract: flowers deep violet-blue, often numerous, 3–12, on nearly erect, slightly exserted pedicels 15–22 mm. long, which become somewhat spreading above in fruit; perianth 8–10 mm. long; stamineal column 4–5 mm. high, anthers small, bright orange-yellow; capsules dark and thick-walled, subglobose to obovoid, 3–5 mm. high: seeds black, globose, 1–1.5 mm. in diameter, distinctly pitted and with a rather prominent umbilicus.

In sand or sandy soil near the coast, Long Island to New Jersey, flowering from June till August, the fruit sometimes persisting till October.

New Jersey: Point Pleasant, Ocean Co., July 17, 1882, E. H. Day: Monmouth Co., Oct. 2, 1886, N. L. Britton.

New York: Staten Island, Todt Hill, June 12, 1887, and Tottenville, Aug. 3, 1890, N. L. Britton; Long Island, Southampton, June, 1898, W. N. Clute; Hempstead, June 30, 1899, Miss Fanny A. Mulford; Sag Harbor, July 20, 1899, still in flower, N. L. Britton; Amagansett, Aug. 7, 1899, Miss E. Babcock.

The specimens cited are contained in the herbaria of Columbia University and the New York Botanical Garden and in my private collection.

An interesting and unexpected addition to our eastern coast flora, of very restricted range, so far as yet appears, but in all probability extending further south than New Jersey and eastward to the New England coast.*

The species is a perfectly distinct one and though appearing intervenient with *S. graminoides* and *S. Atlanticum* is in closer relationship with a group of more southern species, including *S. xerophyllum* Greene and *S. rufipes*, characterized by a dense fibrous coating about the base of the tufts. In the possession of this character *S. arenicola* differs notably from all other species of the northern states except *S. Farwellii*, a very different species in other respects.

On herbarium sheets specimens sometimes show fully as much discoloration as *S. graminoides* and might be easily passed over for that species, but a moment's attention will discover that the plant is more caespitose and stiffer in habit than *S. graminoides* with narrower and more attenuate leaves which are thicker and more strongly striate; other evident differences are shorter, frequently clustered peduncles, stiffer and more striate bracts, more numerous flowers and smaller capsules on less exserted and spreading pedicels.

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* Mr. Bicknell writes, under the date of September 14, that he finds *S. arenicola* the common species on Nantucket Island.—Ed.

As compared with *S. Atlanticum*, *S. arenicola* is stouter and stiffer, never developing a flexuous prolongation of the stem from a lower node, and having much less membranous bracts which are decidedly more striate-nerved and acuminate, also the capsules are relatively more subglobose and the seeds larger. Perhaps the most evident feature of contrast between the two plants is in color, the rather deep green of *S. arenicola* producing a very different general effect from the very pale glaucous-green of *S. Atlanticum*.

It should also be noted that the flowering period of *S. arenicola* is considerably later than that of *S. Atlanticum* or *S. graminoides*.

Sisyrinchium intermedium

Dull green, sometimes not even glaucescent, turning dark in drying, the spathes purple or occasionally green: tufts not fibrous at base, 15–35 cm. high, the stems often numerous, the clustered roots numerous and slender: leaves erect, about half the height of the tufts, 1.5–2.5 mm. wide, attenuate and cuspidate-acute, thin and grass-like, the delicate nerves usually with a fainter alternating series, the tissue between minutely cellular-puncticulate, the edges minutely serrulate or even subciliolate-serrulate to smooth; young leaves sometimes roughened on the sides with minute points: stems very straight, frail, mostly 1.5 mm. wide (1–2.5 mm.), the thin wings with closely fine-serrulate edges and nerved like the leaves, usually much broader than the very narrow raised line of the proper stem; stems in some tufts all or nearly all simple, in others mostly forked at the top into two or even three pedunculate spathes subtended by a rather longer erect bracted leaf; peduncles 3–7 cm. long, often roughened on the sides with minute points, the outer one somewhat divergently outcurved, usually slender but distinctly winged, the wings serrulate, gradually widened into the base of the spathe: spathes narrow, sometimes not wider than the stem, erect, flattened and rather sharply two-edged, the sides narrowed to the base and margined below by the ascending wings of the stem; bracts thin, glabrous, delicately nerved, the outer one on simple stems prolonged beyond the inner 8–40 mm. and sometimes three times its length, in pedunculate spathes often but little prolonged, 2–6 cm. long, obscurely or very narrowly hyaline-margined, the edges not united below; inner bract narrow, 15–20 mm. long, narrowly hyaline-margined, mostly attenuate and cuspidate-acute, rarely scarious-obtuse and mucronulate; interior scales acuminate, brownish-tinged, about ⅔ the length of the inner bract: flowers 5–6, pale blue; perianth 8–14 mm. long; stamineal-column 4–5 mm. high: capsules on slenderly exserted and flexuously spreading pedicels 17–25 mm. in length, brown, broadly subglobose, or obovoid, 4 mm. high.

Southern New Jersey to North Carolina, flowering in May and early June.

New Jersey: Gloucester Co., June 1, 1892, B. Heritage, Herb. Phil. Bot. Club.

Pennsylvania: Philadelphia, A. B. Monoy, Herb. Mo. Bot. Gard.

District of Columbia: W. M. Canby, U. S. Nat. Herb.

North Carolina: Buncombe Co., Thos. Hogg, May, 1886, Herb. Columbia Univ.; G. McCarthy, May, 1888, U. S. Nat. Herb.; May 8, 1897, Biltmore Herb.; Wake Co., May, 1896, W. W. Ashe, Herb. W. W. A.; Henderson Co., Mrs. Schoolbred, 1857, Herb. N. Y. Bot. Gard.; also two sheets without record in Herb. Mo. Bot. Gard., one "ex herb. Bernhardi."

A perplexing plant appearing about intermediate between *S. graminoides* and *S. mucronatum*, yet not to be correlated with either one, although in its most divergent forms, showing a near approach to both. The more branched forms, which are nearest to *S. graminoides* differ in narrower and more attenuate leaves and purple spathes, and usually also develop many simple stems bearing spathes with much prolonged outer bracts; the branches when present are mostly shorter and more slender than in *S. graminoides* and, like the younger leaves, may be roughened on the sides; the margins of the stem and leaves are also usually more definitely serrulate than in *S. graminoides.*

The opposite form in which the stems may be all simple closely simulates *S. mucronatum* but dries dark and has thinner, more broadly winged stem and larger darker capsules on flexuously spreading pedicels as in *S. graminoides.*